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Povlsen, Lene; Aryal, Umesh Raj; Petzold, Max; Krettek, Alexandra

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Lene Povlsen<sup>a,\*</sup>, Umesh Raj Aryal<sup>a</sup>, Max Petzold and Alexandra Krettek

# Adolescents' knowledge and opinions about smoking: a qualitative study from the Jhaukhel-Duwakot Health Demographic Surveillance Site, Bhaktapur District, Nepal

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## Abstract

**Background:** The use of tobacco products among adolescents in Southeast Asia represents a major public health burden. Two out of ten adolescents attending school are tobacco users and several factors influence them to initiate tobacco use. Most studies related to tobacco use are quantitative, whereas qualitative studies exploring adolescents' smoking behavior and their views, knowledge and experiences are scarce.

**Objective:** To gain a deep understanding of Nepalese adolescents' knowledge and opinions about smoking and reasons for smoking initiation.

**Subjects:** Adolescents from four secondary schools in the Bhaktapur district, Nepal.

**Methods:** Eight focus-group discussions were conducted with 71 adolescents aged 13–16 years and from grades 8–10. Data were analyzed using manifest qualitative content analysis.

**Results:** The participants knew that smoking represents health risks as well as socio-economic risks, but few described the addictive nature of tobacco and health risks

related to passive smoking. Most participants related smoking initiation to the smoking behavior of peers and family members, but easy accessibility to cigarettes, ineffective rules and regulations, and exposure to passive smoking also created environments for smoking. Some expressed confidence to resist peer pressure and refuse to start smoking, but also expressed the need for prevention strategies in schools and for governmental initiatives, such as more strict implementation of tobacco control and regulations to prevent and reduce smoking.

**Conclusion:** Curbing the tobacco epidemic in Nepal requires healthy public policies and multifaceted interventions to address the knowledge gap on health consequences associated with smoking among adolescents, teachers and parents/adults.

**Keywords:** adolescents; health behavior; health promotion; Nepal; smoking.

## Introduction

The use of tobacco products continues to rise among children and youth in Southeast Asia including Nepal, and is a major public health burden. Causes for this increase include limited knowledge about the harmful effects, the addictive nature of tobacco products, marketing strategies by tobacco companies, low prices and easy accessibility to tobacco products (1, 2).

In order to prevent/reduce the burden of noncommunicable diseases in Nepal, the Ministry of Health and Population in 2011 passed the Tobacco Control and Regulatory Act, based on the WHO Framework Convention on Tobacco Control (3). The major features are ban on smoking and tobacco use in public places, work places and public transportation; pictorial health warnings covering 75% of the packet of cigarettes and other tobacco products; complete ban on tobacco advertising, promotion and sponsorship; sales ban of children under 18 years; sales ban within the span of 100 m distance from educational and health institutions; a ban on free distribution of tobacco products; and

<sup>a</sup>Lene Povlsen and Umesh Raj Aryal: These authors contributed equally to this work.

\*Corresponding author: Lene Povlsen, Unit for Health Promotion Research, University of Southern Denmark. Niels Bohrs Vej 9, DK-6700 Esbjerg, Denmark, Phone: +45 2625 2264, E-mail: lene.povlsen@gmail.com

Umesh Raj Aryal: Institute of Medicine, Department of Internal Medicine and Clinical Nutrition, Sahlgrenska Academy at University of Gothenburg, Sweden; and Public Health and Environment Research Centre, Katmandu, Nepal

Max Petzold: Centre for Applied Biostatistics, Occupational and Environmental Medicine, University of Gothenburg, Sweden

Alexandra Krettek: Institute of Medicine, Department of Internal Medicine and Clinical Nutrition, Sahlgrenska Academy at University of Gothenburg, Sweden; Department of Biomedicine and Public Health, School of Health and Education, University of Skövde, Sweden; and Faculty of Health Sciences, Department of Community Medicine, UiT The Arctic University of Norway, Tromsø, Norway

provision of health tax funds from tobacco products (3). However, there are still a number of challenges and barriers for successful implementation of the law due to limited resources, weak intersectoral coordination and insufficient political commitment, as well as low priority given to tobacco control in non-health sectors, low level of public awareness and lack of relevant research (4).

The Global Youth Tobacco Survey revealed that two out of ten Nepalese adolescents attending school were tobacco users (5), while a community-based study revealed that nearly five out of ten adolescents were susceptible to smoking (6). Psychosocial factors such as sex, age, socioeconomic status, peer-pressure and parental smoking, as well as knowledge about health risks of smoking, refusal skills and tobacco control policies are likely to influence young people to initiate tobacco use (6–11).

Smoking behavior can be understood through several theories. According to the Health Belief Model (12), health behavior is closely related to an individual's belief about perceived threats (risk and seriousness) and outcome expectations (barriers and benefits). The Theory of Reasoned Action and Theory of Planned Behavior explain an individual's behavioral intention as a combination of attitudes, subjective norms and perceived control (13, 14). In contrast to these intrapersonal theories, the Social Cognitive Learning Theory is interpersonal and focuses on cognitive factors, behaviors and the environment (observational learning), and how these factors dynamically and reciprocally affect each other and shape self-efficacy and the health behavior of an individual (12, 15). Theories can even be useful for interventions and health education programs aiming to prevent tobacco use and increase smoking cessation among adolescents (16–18). Likewise, qualitative studies are important for gaining a deeper understanding of adolescents' smoking behavior and their views, knowledge and experiences of smoking (19).

The present study aimed to describe Nepalese adolescents' knowledge and opinions about cigarette smoking and reasons for smoking initiation. Further, it aimed to identify adolescents' view on prevention strategies for tobacco use at schools and by the government in order to provide ideas for the development and implementation of health education programs.

## Materials and methods

### Study setting and participants

The study was conducted during April 2013 and May 2013 in the Jhaukhel-Duwakot Health Demographic Surveillance site, Bhaktapur

district in Nepal, 13 km east of Kathmandu. This is a peri-urban area shifting towards urbanization, where the population has adopted a modern life style.

As the study aimed to describe the adolescents' general knowledge and opinions about smoking, a representative sample was recruited. It consisted of adolescents aged 13–16 years and from grades 8–10, because these are known to be vulnerable to initiation of smoking and using other tobacco products (6, 20). Moreover, an equal number of girls and boys from private as well as public schools and from different castes were recruited. All students aged 13–16 years in the surveillance site go to school, but schools were also chosen due to the ease of obtaining the cooperation of school authorities and accessing the adolescents.

Focus-group discussions (FGDs) were conducted in four schools, including two governmental and two randomly selected private secondary schools (21). Author URA visited the selected schools to establish contact with school principals and concerned classteachers, and later selected six students (three males and three females) of each grade using a lottery method and with the subsequent help of the teachers to check the representativity of the sample. Thus, 72 students, an equal number of boys and girls, aged 13–16 years and from grades 8–10 were enrolled; but one boy did not participate in the FGDs (Table 1).

### Data collection

Eight FGDs, each containing nine students, three from each grade, were conducted. Open-ended questions from a semi-structured interview guide were asked. The guide was developed using relevant literature and health behavior theories, just as public health experts were consulted and amendments made based on their comments. The guide was pretested in a private school in the Kathmandu district similar to the study site. This only resulted in minor changes of the probing questions included in the guide.

Two persons conducted the FGDs. Author URA who had previously conducted community-based studies on smoking was the

**Table 1:** Demographic characteristics of the participants.

	Government school		Private school		Total
	Male	Female	Male	Female	
Age					
13	5	7	6	2	20
14	5	2	6	8	21
15	6	7	6	6	25
16	1	2	0	2	5
Total	17	18	18	18	71
Caste					
Brahmin	4	2	8	12	26
Chhetri	6	0	7	3	16
Newar	4	4	3	2	13
Tamang	1	5	0	0	6
Lama	0	4	0	1	5
Magar	2	1	0	0	3
Gurung	1	0	0	0	1
Thakuri	0	1	0	0	1
Total	17	18	18	18	71

main moderator, while a public health graduate with previous experiences in qualitative interviews ensured that the discussions progressed smoothly and that all topics were covered. A note taker was responsible for tape-recording the discussions and taking notes. To create an environment where participants felt comfortable and felt free to express their opinions, we conducted separate FGDs for boys and girls.

We began each FGD by welcoming and introducing the participants to the objective of the study and the procedure of the FGD. Participants were asked to contribute to the discussion and to make room for each other, and were especially encouraged to explain their views openly and in their own words (21). Discussions focused on [1] reasons for smoking initiation, [2] knowledge of risks, [3] adolescents' refusal skills and [4] perceptions of school and governmental tobacco control initiatives. Probing questions were asked when required to elicit responses from participants. Keywords stated during the FGDs, which could inform the analysis and help to categorize the interview data, were noted. All FGDs were conducted in Nepali and lasted about 90 min. Primarily for practical reasons, FGDs were conducted within school hours and in separate classrooms at schools. To ensure that participants felt free to express themselves openly, no teachers or other nonrelevant persons were present during the discussions.

## Data analysis

An experienced translator transcribed the interview data verbatim and subsequently translated them into English. The audio tapes, the notes and the transcriptions were reviewed and thoroughly discussed among the moderators and the note taker before data was imported into Open Code 3.6.2.0 software to facilitate the coding procedure (22).

Manifest qualitative content analysis as described by Graneheim and Lundman (23) was applied and included the following steps: (i) the text was read several times to gain an overall view of the content, (ii) words and sentences describing a central meaning (meaning unit) were identified, (iii) meaning units were condensed without changing the original meaning, (iv) the condensed meaning units were labeled with a code stating their contents, (v) categories including a number of sub-categories consisting of groups of codes with a similar content were created. An example of the analysis process is given in Table 2, and quotations from the FGDs are presented in the text to facilitate the evaluation of the credibility of the findings. Author URA analyzed the transcribed tapes under the supervision of author LP who is an experienced qualitative researcher. The findings emerging during the analysis of data were regularly discussed with the co-moderator, note taker, and the co-authors. All authors are rooted in the field of public health.

## Ethical considerations

The Ethical Committee of Kathmandu Medical College approved the study. Additionally, the principals of each school gave us permission to approach the students. Students were informed that they had the right to refuse to participate and were free to leave the room at any time during the discussions. They gave informed verbal consent to participate and to the FGDs being tape recorded. All participants were informed about confidentiality of data and agreed not to disclose information outside the groups. Each participant received a lunch pack and stationary valued at NPR 200 (approximately \$2.22) after FGDs.

## Results

The students appeared eager to share their knowledge and experiences. Some of the girls were initially a little shy, but participated well after encouragement. Overall, the participants expressed quite similar experiences and no variations emerged regarding students from private and public schools. All participants were asked, but only one male participant confirmed being a smoker.

The findings are presented in three categories covering the main themes of the study (Table 3). Each category includes two or three subcategories.

## Knowledge about smoking and associated risks

### Knowledge about tobacco products and smoking

The participants had seen tobacco products and were familiar with the various products available. They knew the name of tobacco products but had difficulties differentiating between smoking and smokeless products. Participants recognized that tobacco products are considered harmful to health and most stated that they did not smoke, but that many of their friends smoked cigarettes whenever they met outside school. They believed that smoking was a bad habit, but few described the addictive nature of smoking except for a 16-year-old girl who explained her experiences in the following way:

**Table 2:** An example of the data analysis process using manifest content analysis.

Meaning unit	Condensed meaning unit	Code	Subcategory	Category
I heard those people who smoke cigarettes have risk of getting heart disease	Smokers can get a heart disease	Heart disease	Awareness of health hazards and social risks of smoking	Knowledge about smoking and associated risks

**Table 3:** The result of the manifest content analysis.

Categories	Subcategories
Knowledge about smoking and associated risks	Knowledge about tobacco products and smoking
Factors influencing smoking	Awareness of health hazards and social risks of smoking
	Reasons for smoking initiation
	Variations of smoking behaviors
Strategies to discourage smoking	Refusal skills
	Prevention strategies in schools
	Governmental initiatives

*My brother started smoking when he was in grade six and became addicted to cigarettes. When I asked him to quit, he said 'Sister, I can quit my family and my house, but I cannot quit smoking'.*

### Awareness of health hazards and social risks of smoking

The participants were aware that tobacco products contain chemicals that are likely to cause health hazards, and they also knew that smoking may affect life expectancy. Some mentioned short-term consequences such as coughing, dizziness and headache as well as various cosmetic consequences of smoking: *'My father smokes for many years, so his teeth are black'* (boy aged 15 years). Participants also highlighted several more severe health consequences such as asthma, lung cancer and heart disease, and shared family stories regarding health effects of smoking:

*My father smokes since he was an adolescent. Last year, he was admitted to hospital for two weeks because of chest pain and trouble in breathing. The doctor told us that he was suffering from asthma. Now, there is an oxygen cylinder to resolve asthma attacks at home and he told me not to smoke* (girl aged 16 years).

Participants also described the risk of social and financial consequences due to smoking and that this could affect both smokers and their families. They agreed that *'smoking is a waste of money'* and explained that smokers might risk loss of property due to expensive treatment if they became ill due to smoking-related diseases. Some mentioned family members who had spent many hours attending sick smokers and thereby had lost their income. A 15 years old boy presented the following story:

*My uncle was a chain smoker and liked to stay alone at home. He used to express anger and quarreled with family members. No one liked him. Later, he quit smoking and became a prestigious businessman in the village. Now, he encourages us not to smoke cigarettes by sharing his bad experiences of smoking.*

## Factors influencing smoking

### Reasons for smoking initiation

According to the participants, many adolescents started smoking when they were aged 14–17 years. Smoking initiation was primarily related to the influence of socio-environmental factors such as peer pressure, parties/feasts/festivals and to people around them smoking. A 14-year-old boy said: *'All of my friends smoke. I do not want to be the odd man out. Therefore, I smoke'*. Many expressed that curiosity was one of the reasons to initiate smoking and that adolescents liked to imitate other people's behavior. Some argued that adolescence is the age for experimentation with cigarettes *'just to try it and know its taste'*. However, peer pressures as well as the smoking behavior of elder brothers and other relatives were described as the most important factors for initiating smoking.

### Variations of smoking behaviors

Most of the participants' friends smoked, and more boys smoked than girls. The participants also had the opinion that members of all ethnic groups were smoking, but that smoking was more common among Newar, Tamang and Chhetri adolescents. Adolescent boys commonly smoked at the cinema, in the forest area, in cafés and pool houses, in the area behind a temple, or in friends' houses when parents were not at home. In contrast, adolescent girls rarely smoke in public places as this was taboo in Nepalese society: *'If girls have such behaviors, it will be a big issue in family, society and schools'* (boy aged 16 years).

Adolescents with poor academic performances might smoke to relieve tensions, while those with good performances smoked due to happiness. Some smoked because of tragic love stories or family tensions or for fun during social and religious gatherings:



*Last year, we were drinking milk with bhang (a paste created by grinding cannabis leaves) during Holi (national festival) with family members. Suddenly, I heard my cousin was whispering with my elder brother to go outside the home and smoke. I asked him why they wanted to smoke as it was not good for health. He scolded me and said: 'Babe, you do not know anything about a cigarette. It gives me both fun and pleasure' (boy aged 16 years).*

## Strategies to discourage smoking

### Refusal skills

Participants expressed confidence that they would be able to resist peer pressure and refuse to smoke even if their friends began smoking. Some would stay away from smoking and would tell their friends about the negative consequences of smoking, and some girls said they would end a friendship, if the friend offered them a cigarette. However, others said that they would probably smoke cigarettes if their friends encouraged them to do so.

Most would be embarrassed to ask someone not to smoke, but participants felt it was easier to ask parents and other family members not to smoke than senior students and people outside the family. They also reported negative reactions:

*When I was travelling in a bus /.../ the driver started to smoke a cigarette inside the bus. I was irritated by the smell of smoking, so I told the driver not to smoke. He reacted angrily, saying 'Who are you to say. If you do not like it, you can change the bus' (girl aged 15 years).*

### Prevention strategies in schools

Both students and teachers were smoking cigarettes right outside the school compound. Participants were aware that exposure to passive smoking could increase vulnerability to start smoking, and therefore sale of cigarettes and smoking close to the school premises should be restricted. Schools should have strict rules about smoking and fine students who smoked near the school. Teachers were said to be bad examples:

*I do not want to take the name of a teacher who smokes cigarette. In the classroom he teaches us not to smoke, but he smokes with his colleagues outside the school. It gives a negative image to the students (boy aged 15 years).*

Participants also suggested that there should be anti-smoking messages like posters in the school periphery and that schools should offer health education to

students, teachers and other staffs at schools. Some had the opinion that schools should provide counseling to students who smoked. Others suggested that physical punishment should be given to students who smoked, and that parents should be alerted about their children's behavior. Likewise, school bags should be checked frequently in the classroom and if cigarettes were found, the student should be punished.

### Governmental initiatives

Participants reported that cigarettes were easy to obtain from food stores, tea shops and street shops and that the government should implement more strict tobacco control and regulations. Written warnings on cigarette packages were written in a small font size. Nobody noticed them and they should be written in a larger size. Participants further suggested that pro-tobacco advertisements should be completely banned in public places, and that the (banned) sale of tobacco products to adolescents and children should be put into practice as well. Some suggested that there should be heavy taxes on tobacco products to prevent and stop smoking, and even that tobacco industries should be closed and replaced by other industries:

*The government is collecting the tobacco tax and investing it in developmental activities and security, but when it comes to health, we have to spend more. Therefore, it is better to close tobacco companies to promote our health (girl aged 14 years).*

## Discussion

The present study contributes new knowledge regarding Nepalese adolescents' knowledge and opinions about smoking, and increases the understanding of the socio-environmental context of adolescents' health behavior. Along with similar studies from both high-income and other middle- and low-income countries, it may provide inspiration for future preventive initiatives and intervention programs.

We found that the participants had knowledge about tobacco products and knew that smoking can lead to a number of health risks and socio-economic risks. However, few described the addictive nature of tobacco and the health risks related to passive smoking. The latter is unfortunate from the perspective of the Health Belief Model and its focus on perceived threats as essential for health behavior and health behavior change (12). The findings are in line with studies from Indonesia and Iran

showing that poor knowledge and misconceptions about cigarette smoking and health risks lead adolescents to become smokers (24, 25). Another study from Nepal likewise found that knowledge of short-term health risks and risk of addiction could decrease smoking susceptibility (9). Moreover, a recent study from Sri Lanka demonstrated that few adolescents included had a good level of knowledge on passive smoking and therefore recommended improved health education towards this group (26).

Our participants mentioned a variety of reasons for initiation of smoking such as curiosity, fun and relief of tensions. However, most participants related smoking initiation to the smoking behavior of family members and peers. These findings are consistent with the Social Cognitive Learning Theory in suggesting that the foundation of adolescents' health behavior is rooted in their observation of role models, indicating that an individual is more likely to initiate smoking if this is considered acceptable to and the norm of peers (12, 15). Other studies also confirm that family members, teachers, and friends smoking (7–9, 20, 24–27) and ignoring smoking behaviors in the family (25) can motivate smoking initiation among young people.

Some participants expressed confidence in resisting peer pressure and refusing to start smoking. According to the Social Cognitive Learning Theory (12, 15), self-efficacy in resisting social influence is the most important predictor of behavioral intentions. Health education based on the Health Belief Model has likewise been effective in increasing refusal skills among adolescents (12, 28). Interestingly, Nepalese girls in our study and Indian adolescent girls (7) were confident that they could resist smoking initiation, due to the fact that tobacco use by girls is considered culturally unacceptable in both countries.

According to our participants, easy access to cigarettes, ineffective rules and regulations and exposure to passive smoking created environments for smoking. The latter is in line with a recent study showing that adolescents in Sri Lanka were exposed to passive smoking both at home and in public (26). In our study, participants also expressed the need for prevention strategies in schools and for governmental initiatives such as a more strict implementation of tobacco control and regulations to prevent and reduce smoking. Although the existing tobacco act bans smoking within 100 m of an educational institution, students are still exposed to smoking within the periphery (9). Anti-smoking activities at school may help create smoke-free areas in the school periphery (2–4) and may also encourage both students and teachers to increased self-efficacy and choice of a healthy lifestyle (12–15). Being a public health concern, adolescents' smoking behaviors should be addressed by national public health

policies (29). These should focus on social arenas such as the family, schools and the wider community in which smoking at present appears to be a norm (26) and seen as a metaphor for potency and masculinity (24).

## Methodological considerations

FGDs were an appropriate method for gaining a deeper understanding of Nepalese adolescents' knowledge, perceptions and experiences about smoking, as FGDs offer participants interactive discussions among themselves and thus provide researchers the opportunity to capture how participants construct and negotiate their views (21). Each FGD included participants of different ages, castes and grades, and from both private and governmental schools, thus ensuring transferability of data. To establish trustworthiness, data collection and analysis closely followed recommended steps (23). To ensure collection of valid information, the moderators and the note taker had brief discussions after each FGD, just as the findings emerging from the analysis of data were continuously discussed among the authors. Quotations from FGDs are presented in the text to provide the reader the opportunity to interpret data and thus establish confirmability. As is the case with all qualitative studies, the findings cannot be transferred to apply to all Nepalese adolescents or adolescents in general, but they may still provide professionals and politicians with insight and useful knowledge for developing future preventive initiatives to curb the smoking trend.

## Conclusion

A number of factors contribute to Nepalese adolescents' initiation of smoking. Curbing the tobacco epidemic therefore requires multifaceted interventions that combine knowledge from research and well-established health behavior theories. Our findings further suggest a need to develop and implement interventions to address the knowledge gap on health consequences associated to smoking among adolescents, teachers and parents/adults. Prevention strategies should likewise aim to provide adolescents with the skills needed to identify and resist influences to initiate smoking.

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